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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

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EXAMINER

PAUL, DISLER

ART UNIT

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2615

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,516	Applicant(s) TOURWE, BRUNO KORNEEL RENE	
	Examiner DISLER PAUL	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 8, 12, 14, 15, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7, 9-11, 13 and 15-22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 22 recites the limitation "the low pass filter" in claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23-24 are rejected under 35 U.S.C. 101 because they pertain to non-statutory subject matters.

The claims are pertained solely to a data structure without recitation of any step(s) to be performed on a computer or any process activity that ties to physical acts or data manipulation representing physical object or activities to achieve a practical application.

"Data structures **not claimed** as embodied in computer-readable media are descriptive material per se and **are not statutory** because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (Claim to a data structure per se held nonstatutory.). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory."

See Interim Guidelines on 35 USC 101, Annex IV (a): Functional Descriptive Material.

Note: please make necessary amendment at to claims preamble and write in proper format to overcome the subject matter

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,3, 12-14, 16,18, 20; 23/13, 23/14,23/16,23/18; 24/13, 24/14,24/16, 24/18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanna (US 5,796,842).

Re claim 1, Hanna disclose of the sound reproduction system comprising a digital audio signal input, a digital audio signal processor and a digital audio signal output wherein the digital signal processor comprises a high pass (filter with a pass frequency of between a first and a second frequency, a compressing amplifier for compression and amplification of a signal, at least amplification being performed after HP filtering, and a clipper for clipping the HP filtered, compressed and amplified signal above a clipping level (fig.3 wt (212,214,280,290,232,254); col.9 line 45-67; col.12 line 32-44; col.18 line 10-20; col.21 line 50-65).

Re claim 12, the sound reproduction system as claimed in claim 1, wherein the system comprises the high pass filter followed by an AGC followed by a limiter/clipper (fig.3; col.12 line 45-65; col.14 line 10-20).

Re claim 3, the sound reproduction system as claimed in claim 1, wherein the high pass filter is a first order or second order filter (col.10 line 10-16).

Re claim 13, a sound reproduction system as in claim 1, wherein the system comprises an automatic volume leveler preceded or preferably, followed by the hip pass filter, providing a leveled signal, followed by a gain and a clipper (fig.5-6; col.12 line 43-67/volume amplified).

Re claim 14, Hanna disclose of the method for processing digital sound signals in which method frequency component of the sound signal lower than a cut-off frequency (f) between a first and a second frequency are attenuated, the sound signals are amplified and compressed to within a signal band width and clipped above a clipping level within the signal band width (fig.3 wt (212,214,280,290,232,254); col.9 line 45-67; col.12 line 32-44; col.18 line 10-20; col.21 line 50-65).

Re claim 16, the method as claimed in claim 13 wherein a noise level is measured and the cut-off frequency is determined in dependence on

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the measure noise level (fig.3; col.9 line 64-col.10 line 15/noise remove based on filter specified).

Re claim 18, the method as claimed in claim 16, wherein the cut-off frequency ranges between 50Hz and 2KHz (col.10 line 1-12).

Re claim 20 has been analyzed and rejected with respect to claim 16.

Re claims 23/13,23/14;23/16,23/18; 23/20; 24/13; 24/14,24/16;24/18; 24/20 have been analyzed and rejected with respect to claims 13-14,16,18 respectively.

6. Claims 2, 8, 15,17, 19, 21-22, 23/15; 23/19; 23/21-22; 23/17; ; 24/15; 24/19; 24/17; 24/21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanna (US 5,796,842).

Re claim 2, Hanna disclose of the sound reproduction system as claimed in claim 1, wherein the pass frequency (f) is a frequency between certain ranges (col.10 line 5-15). But, Hanna fail to disclose of the specific wherein the pass frequency is between 300 Hz and 2 kHz.

However, official notice is taken the concept of having the specific wherein the pass frequency is between 300 Hz and 2 kHz is simply the designer's preference, thus it would have been obvious for one of the ordinary skill in the art to have modify Hanna with the specific

wherein the pass frequency is between 300 Hz and 2 kHz for purpose of having a DC component signal not interfering with the audio component transmission signal.

Re claim 15 has been analyzed and rejected with respect to claim 2.

Re claim 19, the method as claimed in claim 13, wherein after compression and clipping frequency components of the resulting digital signal below a cut off frequency are attenuated (fig. 3(238),10; col.18 line 1-15), But, Hanna fail to disclose of the specific wherein the cut off frequency between 2 and 4 KHz are attenuated. However, official notice is taken the concept of having the specific wherein the pass frequency is between 2 and 4 KHz are attenuated is simply the designer's preference, thus it would have been obvious for one of the ordinary skill in the art to have modify Hanna with the specific wherein the pass frequency is between 2 and 4 KHz are attenuated for purpose of having a DC component signal not interfering with the audio component transmission signal.

8. A sound reproduction system as claimed in claim 1, wherein the digital audio processor comprises a low pass filter for filtering the signal provided by the compressing amplifier and for providing an output signal, the pass frequency of the low pass filter lying in a certain range (fig.3 wt (238); col.18 line 1-25), However, Hanna fail to disclose of the specific wherein such range is lying in the 2 kHz-

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$F_s/2$ where F_s is the sampling frequency. However, official notice is taken the concept of having the specific wherein wherein such range is lying in the $2\text{ kHz}-F_s/2$ where F_s is the sampling frequency is simply the designer's preference, thus it would have been obvious for one of the ordinary skill in the art to have modify Hanna with the specific wherein such range is lying in the $2\text{ kHz}-F_s/2$ where F_s is the sampling frequency for purpose of having a DC component signal not interfering with the audio component transmission signal.

Re claim 22, Hanna disclose of the method as claim in claimed 13 , wherein setting of a low pass filter and amplification in the leveling amplification step (fig.1; 5 wt (low pass filter and amplification of signal); col.12 line 43-67; col.18 line 2-17); But Hanna fail to disclose of the specific wherein the frequency dependence of the low pass filter performed in dependence of the of the amplification level. But, official notice is taken the concept of having the frequency dependence of the low pass filter performed in dependence of the of the amplification level is well known in the art, thus it would have been obvious for one of the ordinary skill in the art to have modify Hanna with the frequency dependence of the low pass filter performed in dependence of the of the amplification level for removing appropriate artifact sound level.

Re claim 17, the method as claimed in claim 16, with the cut-off frequency being determined with noise (see claim 16), but, Hanna fail

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to disclose of the concept wherein frequency is determined by a non-linear function of the noise level. However, official notice is taken the concept of determining frequency by a non-linear function of the noise level is well known in the art, thus it would have been obvious for one of the ordinary skill in the art to have modify Hanna with similar concept of determining frequency by a non-linear function of the noise level for removing arbitrary artifact components in the sound transmitted.

Re claim 21 has been analyzed and rejected with respect to claim 17.

Re claims 23/15; 23/17; 23/19; 23/21-22; 24/15; 24/17; 24/19; 24/21-22 have been analyzed and rejected with respect to claims 15,17, 19, 21-22 respectively.

7. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanna (US 5,796,842) and further in view of Suzuki (US 7,130,433 B1).

Re claim 6, the sound reproduction system as claimed in claim 1, wherein the compressing amplifier is arranged to amplify dependent of the signal strength level (col.16 line 27-65), However, Hanna fail to disclose of the specific wherein amplifier is arranged not to amplify a signal having a signal strength below a threshold value. But, Suzuki disclose of an audio processing system wherein the amplifier is arranged not to amplify a signal having a signal strength below a

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threshold value (col.8 line 1-15; fig.1) for purpose of achieving optimum noise reduction in signal component of noise level. Thus, taking the combined teaching of Hanna and Suzuki as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Hanna with the amplifier is arranged not to amplify a signal having a signal strength below a threshold value for purpose of achieving optimum noise reduction in signal component of noise level.

Allowable Subject Matter

8. Claims 4-5,7,9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claims 4,7 9, None of the prior art of record disclose of the features as a whole, sound reproduction system comprising a digital audio signal input, a digital audio signal processor and a digital audio signal output wherein the digital signal processor comprises a high pass filter with a pass frequency of between a first and a second frequency, a compressing amplifier for compression and amplification of a signal, at least amplification being performed after HP filtering, and a clipper for clipping the HP filtered, compressed and amplified signal above a clipping level and measuring device for measuring a background noise and an adapter for adapting one or more parameters for the high pass filter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DISLER PAUL whose telephone number is (571)270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./
Examiner, Art Unit 2615

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615